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The Forester

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of forests and forest trees and to related subjects.



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THE AMERICAN FORESTRY ASSOCIATION.

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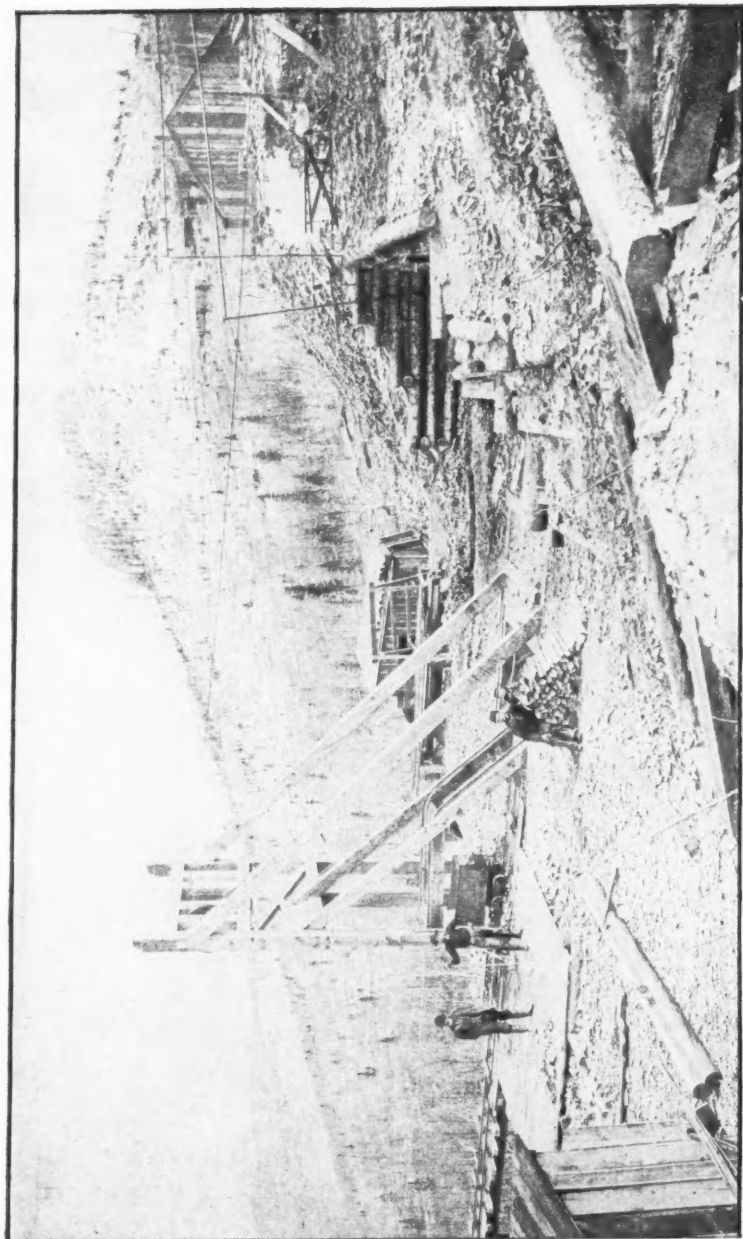
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USE OF TIMBER BY MINERS ; SCENE IN CRIPPLE CREEK DISTRICT, COLORADO.

The Forester.

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News Items.

Timber is being furnished from Oregon forests to be used in the construction of a Russian railroad in China.

A paper mill, to cost \$600,000, is to be erected at White Rapids, on the Menominee River, upper Michigan, this year.

Cedar logs have been exhumed in New Jersey which geologists affirm are fully 4,000 years old. They are in perfect condition.

There are now thirty-five forest reserves. The aggregate area within the boundaries of the land thus reserved is 45,913,794 acres.

The surveyor general of the Minneapolis district, Minnesota, estimated that the cut of logs on the upper Mississippi River would be, this season, not far from 600,000,000 feet.

THE FORESTER is under obligations to the *American Lumberman*, of Chicago, through whose kindness it is enabled to produce several of the illustrations which appear in this issue.

A walnut tree was cut down on the Woods farm in Wabash County, Indiana, says the *Indiana Farmer*, which was nine feet in circumference at the base and sixty feet to the first limb.

Mr. Elwood Mead, who for ten years past has been State Engineer of Wyoming, has resigned to accept a position as Irrigation Expert in charge of investigations in the Department of Agriculture.

W. J. Hoover, of Hoover & Slavin's lumber camps, near Glen Campbell, Pa.,

reports the cutting of a big Pine tree which was 51 inches in diameter, and which cut 10,000 feet. The butt log scaled 2,240 feet.

We wish to call attention to an error of proof reading in the March number of THE FORESTER, in which, on page 54, the names Red Fir and Yellow Fir should have been used instead of Red and Yellow Spruce.

The great pontoon bridge for the Chicago, Milwaukee & St. Paul Railway across the Mississippi River at Prairie du Chien, Wis., was launched lately. It absorbed in its construction 500,000 feet of Washington Fir.

The world's supply of timber bids fair to last for many years yet. It is stated that in the Province of Archangel, in Russia, there are forests belonging to the Government which cover 88,970,400 acres in which the ring of the woodman's axe has scarcely yet been heard.

The German Government has been purchasing Puget Sound Fir decking for its new war vessels. One ship recently took 1,200,000 feet of decking for Hamburg and other shipments were to follow. Heavy purchases have also been made for the same purpose by Philadelphia ship yards.

Labor has been in great demand in the lumber camps of Michigan, Wisconsin and Minnesota during the past winter. Common laborers have received as high as \$35.00 per month, while skilled woodsmen have commanded higher wages than they have been able to do for many years.

The North American Paper & Lumber Company has recently secured from the Nova Scotia Legislature the lease of a tract of nearly 1,000 square miles of land in Victoria and Inverness Counties, Cape Breton. The lands are leased for the purpose of converting the timber thereon into pulp and paper.

During the last month tree bounties to the total of \$19,563 68 were paid out to farmers in Minnesota who have planted trees under the act of the Legislature in that State giving bounties to those who thus plant. Bienville County has 1,761 acres of trees planted, the farmers receiving therefor a total of \$4,226.

General Andrews, the chief fire warden of Minnesota, is authority for the statement that while that State for the past twenty-five years has been paying the annual sum of \$20,000 in bounties on tree planting, the destruction of forest growth has far exceeded the renewals; at a rate which, he believes, will exhaust the White Pine supply of that State in fifteen to twenty years.

By the sale of Pine logs in the years past the Menominee Indians, in north-eastern Wisconsin, to the number of 1,300 men, women and children, have accumulated a fund of \$1,000,000, which is held for them, in the form of interest-bearing bonds, by the Government. This fund grows from year to year. The tribe expends about \$75,000 a year in logging operations, and annually clears from \$50,000 to \$100,000.

Prof. James Troop, of the Indiana Agricultural Experiment Station, has been appointed State Entomologist. Under the law recently enacted by the Legislature of that State he is required to inspect all nurseries in the State,

where trees or plants are grown for sale, at least once a year, and report upon the discovery of insect pests infesting nursery stock.

The biggest sticks of timber ever cut in Portland, Oregon, were cut at the mill of Inman, Paulsen & Co. recently. They were of Fir, and were three feet square, and a little more than forty-eight feet long. They contained 5,200 board feet, and weighed about 20,000 pounds each. The timbers were sawed without the aid of special machinery, and were handled easily by the ponderous apparatus at the mill.

One of the most persistent and active workers in the cause of forestry for several years past is Mr. John P. Brown, of Connersville, Ind., who has been elected president of the newly organized Indiana Forestry Association. It was due to Mr. Brown's tireless efforts that the Indiana Legislature passed the law for the encouragement of the care and preservation of forest lands in that State, mention of which is made elsewhere in this issue of THE FORESTER.

The snowfall in the mountains of Colorado during the past winter seems to have been unprecedented in quantity. Some of the lines of railway were not reopened for traffic until March 20, having been completely blockaded by snow for two months. Capt. Edward L. Berthoud, of Golden, Jefferson County, who is one of the most active members of the American Forestry Association in Colorado, reports the snowfall for the winter as follows: September, October and November, 27¾ inches; December, 15¾ inches; January, 10½ inches; February, 12 inches; March, 7¾ inches; total 73½ inches, and it is probable that it was much heavier in the higher ranges.

Why Miners Should Join the American Forestry Association.

BY THE DIRECTOR OF THE U. S. GEOLOGICAL SURVEY.

The interests of miners in the protection of timber is a vital one. In the *Popular Science Monthly* of February, 1898, I said:

"MINING INTERESTS.—The mining interests of the Western States should be the most urgent in the demand for care and protection of the forests under Government direction. Upon the abundance or scarcity of timber will depend the development of many mining enterprises, and through them the advance or retardation of the growth of the State in which they are situated. That scarcity of timber will limit mining is without question, unless the mines are sufficiently rich to pay the added cost that transportation from a distant source of supply will entail. This will apply particularly to the small mine owner, and to the miner with little capital who wishes to develop promising prospects.

"There is no doubt that the abundant timber supply of the Black Hills of South Dakota has given great impetus to the development of the mineral wealth of the region. It is equally true that if that timber supply is removed by being wasted, or is destroyed by forest fires, the future mining of the region will be limited to the working of a few rich mines which can afford to pay high prices. Scarcity of timber all over the West is not a remote contingency if the present waste and destruction are permitted to continue; it is already in sight. Indeed, it will not be long before the magnificent forests of the Pacific coast will be so greatly injured by fire and wasteful cutting that the mining communities will have to draw their best timber from Canada and Alaska.

"The opponents of the forest reserves have frequently stated that the reservation policy would cripple the mining industry. It is believed, however, that there would be much more truth in the

statement that the destruction of the forests would seriously injure and in many instances ruin the mining industry. This industry demands a permanent source of supply of timber, and it hardly needs to be said that, without some such policy as that of forest reservation, no such source of supply can be maintained. If mining men can be brought to understand that their industry will be protected by the proper administration of the reserves, the future of both the mining and the lumber interests of the West will be provided for."

There are great areas of Western forest lands no longer held by the Government, the protection of which from waste and destruction is as important to many mining regions as that of the forest reserves themselves. Such protection should not mean the withdrawal of any part of these lands from use, but the harvesting of their timber product without destroying their capacity to produce valuable trees. Many timber owners do not realize how quickly young trees too small to cut grow to merchantable size if protected, and how simple are the methods by which the forests can be kept from losing their productive power.

Among the objects of the American Forestry Association the prevention of forest fires and the introduction of simple and effective improvements in lumbering stand pre-eminent. It is particularly fitted for such work on account of its membership, which includes many prominent lumbermen and nearly all the practical foresters in the United States. Its membership includes men interested in forests and forestry from every point of view, and it unites for the common object all these different influences, which otherwise would be scattered and comparatively ineffective. Its efficiency in attaining its chief end, the preserva-

tion of the forests by use, is greatly increased by the publication of THE FORESTER, through which medium it reaches miners, irrigators, and lumber-

men, as well as those who have a less direct interest in forest protection.

CHARLES D. WALCOTT.

Government Forests and Their Preservation.

BY THE COMMISSIONER OF THE GENERAL LAND OFFICE.

There is so much theory and so much real poetry and romance in the bare mention of forests and forest life, and their association with untrammelled nature, that it becomes difficult to divert the mind to the more artificial phase and the practical details of forest preservation and management. It is, however, with this view I have to deal now. So important has this subject already become in its far-reaching result that it may be said to affect more or less every great industry of the nation. Agriculture, manufactures, and mining are perhaps at present more closely related to the fate of the forest than most other industries. Having disposed of the larger portion of its forest wealth to those whose selfish ends look only to the immediate present, the General Government at last has come to the rescue and through tardy legislation and limited appropriations has partially provided for the preservation of its remaining forests. In this wise policy it has in view a twofold purpose—the encouragement and protection of the timber growth and the conservation of the water supply. These are so interdependent that to remove either one, both are destroyed. The most formidable foes to forest life are the wasteful acts of man and the devastating fire. The object of the Government is to restrain and limit the one, and to prevent the other. It is not essential to the preservation of the forest that it be walled in and its products entirely withheld from use. The prime object of the reserve is that it shall the more largely contribute to a beneficial end. Experience in other nations has demonstrated that much of the matured timber should be judiciously culled from the forest, and

while this surplus is utilized the forest growth is greatly improved. Such cutting and removal, however, should only be permitted after the dead or matured tree has been selected and designated, and where so located that its removal shall not result injuriously to the forest cover and the tree life surrounding it. The purchaser, under our rules, is obliged to remove or destroy the branches and waste material of the fallen trees not essential for use, thereby preventing an accumulation of dry matter which is so conducive to fires. That reasonable compensation may be had to the Government, the timber is estimated and appraised and the price paid by the purchaser, and this forms a fund in partial aid of forest administration. So systematic and so businesslike and economical is the management of other countries in the disposal of the surplus timber from their forest domain that some nations actually count the annual wood yield as among their most profitable revenues. For instance: India collected in one year three millions of dollars net, while Prussia received an income from her forests of six millions of dollars net. The amount expended by the latter country in the management of her forest domain in one year amounted to the enormous sum of eight millions of dollars.

Not only as to the removal of timber, but in other respects is our Government liberal in allowing access to the forest reserves. Prospecting and mining, with the free use of timber for such purposes is allowed; while roadways, bridges, church buildings and school-houses may be constructed and timber used therefor. To the small user of timber, resident in

the reserve, permission is given to remove free of charge in any one year timber to the amount of one hundred dollars for individual use on his own claim, subject to the usual restrictions and supervision. To discourage the demand for reserve timber no export removal of the same is allowed from the State or Territory wherein cut. The precaution against

were, with few exceptions, excellently protected. The largest single reservation is in Oregon; it contains nearly four and one-half millions of acres, and extends from north to south over 234 miles. For a third of a century in the fall of the year it was rare that a clear view could be had in all that distance of the high mountain ranges, least of all of that



VIEW OF BURNED FOREST, PRIEST RIVER RESERVE.

fires, the methods adopted for extinguishing the same, the penalties for causing them, and the discipline which supervises the fire patrol are all so minute in detail as to forbid more than a reference to them. Though but one year has elapsed since the organization of an efficient forestry force, yet the most gratifying results are already the reward. Though numerous most destructive fires last year swept over the great forests not under reserve, yet those under reservation care

majestic, far-famed and ever sought for Mount Hood. Travelers from remote countries came to gaze upon its snow-capped summit and lofty height as it towers far above all the higher mountains of the range, but usually so dense was the volume of smoke as it ascended from the burning forests that no satisfactory observation could be had. Last year, however, so thoroughly had the forest rangers guarded the reserve that not a single day was Mount Hood or any of the

entire Cascade Range obscured from view by smoke. So noticeable was this relief that the leading newspaper of the Pacific Northwest commented editorially as follows:

"Usually from the first of July to the middle of September the air has been heavy with smoke and cinders and the destruction of timber great. As a result of the vigilance of the range patrol the valleys of the Umpqua and Rogue rivers are now free from smoke, no fires being in progress in that section. * * * The absence of the forest fires in the mountains of southern and southwestern Oregon as the result of this system for the first time in many years may be held to have proven its efficacy under a vigilant supervision."

Reports from superintendents of other reservations in other States all contain testimony as to the great exemption of fires from the forests within their charge.

The progress thus far made in reserving forest area can best be appreciated when it is known that at the present date there have been nearly forty-six millions of acres set apart and withdrawn from entry, or a quantity which would about equal thirty-one times the size of the State of Delaware. The reserves are situated in eleven States and Territories. The area embraces thirty-five distinct reserves, not including the Afognak Forest and Fish Culture Reserve in Alaska. To superintend, supervise and patrol this vast empire of forest land there will be employed during most of the present year nine superintendents, twenty-seven supervisors, and 275 rangers or fire patrolmen. The reserves are all mapped and each fire patrol district is designated, so that reference to the map will indicate the location of each supervisor and of all the rangers under him. Reports are promptly made at stated periods from which can be seen where each official has been at any particular day and the kind of service engaged in. Campers, tourists and hunters while in the reserves will be under the constant supervision of the rangers, who will visit the camps and inspect the fires and see to their extin-

guishment when the camp is abandoned, and who will make arrests of persons violating the regulations or permitting fires to extend into the forest, and in further aid of this purpose the Department of Justice has been requested to direct United States Marshals to deputize all forest rangers in order that they may have authority to make arrests within the reserves for offenses committed in violation of the forest regulations.

We can never fully comprehend the real value of the forest relative to conservation of the water supply until we are reminded of the vast domain of our country now remaining vacant and unappropriated, aggregating 546,549,655 acres, exclusive of Alaska and our recent Island possessions. Of this aggregate 332,176,000 acres require the aid of water to render them of utility for farming, and of these acres 69,000,000 are barren, ir reclaimable waste. Under the best economic management sufficient water is available for the reclamation of only 71,000,000 acres for agricultural crops.

One thing yet remains to make the success of the Government complete as to its forest administration, and that is in a more earnest co-operation on the part of the States and land-grant corporations having lands within or near the reserves. A patrol of the even sections of the Government can never be adequate so long as the corporation owning the odd sections fails to exercise like vigilant care as to them. Where sheep grazing is permitted on the odd section it cannot be prevented on the even section except at an enormous cost to the Government. Fire originating through carelessness or design on the one section quickly communicates to that adjoining, whatever may be the efficiency of the patrol. The General Land Office is now in correspondence with State authorities, and with land-grant companies owning lands within or near the reserves, with a view to mutual co-operation for forestry protection, and I am glad to say that already many cordial assurances are received in response. A further suggestion still remains. There exist vast bodies of vacant

forest lands not yet reserved, which having no responsible patrol become the prey of the depredator and the fire fiend, and each year, until remedied, we shall continue to read in the dispatches of the magnificent forests and great wealth which go up in smoke and down in ashes with no sufficient power to control the devouring element. The same laws, rules and regulations which now govern the forest reserves, should be extended over all such unreserved forests, with

the same powers and safeguards for their protection and disposal. It is a solemn and imperative duty the citizens of our country owe to posterity to co-operate singly and collectively in the care of the great forest wealth of the nation, for in so doing they contribute not only to the industrial wealth, but alike to the happiness and health of the unborn millions who are to succeed us.

BINGER HERMANN.

Forest Administration.

Mining in Forest Reserves.

The laws for the regulation of mining in forest reserves make ample provision for the protection of the miner's interests and permit the exercise of every privilege that is consistent with public welfare. Among the provisions of the law are the following :

"It is not the purpose or intent of these provisions or of the act providing for such reservations to authorize the inclusion therein of lands more valuable for the mineral therein, or for agricultural purposes, than for forest purposes

"The Secretary of the Interior may permit, under regulations to be prescribed by him, the use of timber and stone found upon such reservations, free of charge by bona fide settlers, miners, residents and prospectors for minerals, for firewood, fencing, buildings, mining, prospecting and other domestic purposes, as may be needed by such persons for such purposes.

"Nor shall anything herein prohibit any person entering upon such forest reservations for all proper and lawful purposes, including that of prospecting, locating and developing the mineral resources thereof, provided, that such persons comply with the rules and regulations covering such forest reservations.

"All water on such reservations may be used for domestic, mining, milling or irrigating purposes, under the laws of the States wherein such forest reservations are situated, or under the laws of the United States and the rules and regulations established thereunder.

"Upon the recommendation of the Secretary of the Interior, with the approval of the President, after sixty days' notice thereof, published in two papers of general circulation in the State or Territory wherein any forest reservation is situated, and near the said reservation, which after due examination by personal inspection of a competent person appointed for that pur-

pose by the Secretary of the Interior shall be found better adapted for mining or agricultural purposes than for forest usage, may be restored to the Public Domain. And any mineral lands in any forest reservation which shall have been or which may be shown to be such and subject to entry under the existing mining laws of the United States and the rules and regulations applying thereto, shall continue to be subject to such location and entry, notwithstanding any provisions herein contained."

Under the authority vested in the Secretary of the Interior by the act to insure the objects for which forest reservations are created, rules and regulations were prescribed June 30, 1897, by the Commissioner (24 L. D., 189), among which the following are important :

"3. It is the intent to exclude from these reservations, as far as possible, lands that are more valuable for the mineral therein, or for agriculture, than for forest purposes; and where such lands are embraced within the boundaries of a reservation they may be restored to settlement, location and entry.

"19. The law provides that 'any mineral lands in any forest reservation which have been or which may be shown to be such and subject to entry under the existing mining laws of the United States and the rules and regulations applying thereto, shall continue to be subject to such location and entry, notwithstanding the reservation.' This makes mineral lands in the forest reserves subject to location and entry under the general mining laws in the usual manner.

"20. Owners of valid mining locations made and held in good faith under the mining laws of the United States and the regulations thereunder, are authorized and permitted to fell and remove from such mining claims any timber growing thereon, for actual mining purposes in connection with the particular claim from which the timber is felled or removed."

Special Agent Frank Gryglar, of the United States Land Department, is now in Alaska investigating timber depredations. It seems that while the squatter has a right to timber, he has no right to cut timber for sale. A number of yards in Skagway are well stocked with Fir wood, and it is said that some of these parties have already been proceeded against in the court. Some of these made application for settlement, some explained that they were cutting for others. The railroad company had a certain right-of-way, which had to be cleared, and they gave certain parties the timber on condition that they would clear it. This has been investigated already and permitted. Where the fire went through last summer the removal of the injured timber has been allowed. Outside of these two instances all who cut and sell timber will be prosecuted.

Mr. Gryglar has over 200 cases of lands in Alaska located for speculative and not for bona fide improvement. Such locators have been warned not to cut the timber.

The idea of the Government in this is the protection of the country, since stripping the hillsides near Skagway would allow the cold winters to sweep down on the town unhindered and would make snowslides more easy of occurrence.—*Seattle Post-Intelligencer*.

From present indications there will be no sheep in the San Bernardino Forest Reserve this summer, for the authorities are already making preparations to keep the bands out.

Deputy United States Marshal Pourade came in from the reserve Wednesday and found orders awaiting him from B. F. Allen, Forest Superintendent at Los Angeles, instructing him to be on the watch for sheep and not allow them to infringe on the reservation. Pourade says that he will enforce the law even if it is necessary to call out the troops to do so. Sheep are not restricted from passing along the roads but will not be allowed to graze on the reserve.

The sheepmen have received notice

from the officials to notify them when they desire to take their sheep through the mountains, and a patrol will be sent to accompany the bands and see that no harm is done. It is thought that the sheepmen will take kindly to the work of the officials and will not endeavor to break the law, but if such should not prove to be the case, they will be severely dealt with.—*San Bernardino (Cal.) Times-Index*.

A half million feet of Red and White Pine lumber were sold at noon yesterday by United States Marshal Bailey.

The sale was conducted in Park County, about eighteen miles west of Cripple Creek. This is the largest sale ever held in this State, of replevined lumber illegally cut from Government lands. The original value of this lumber when cut was from \$10 to \$15 per 1,000 feet.

United States District Attorney Whitford said yesterday that the Government would be glad if \$5 per thousand was realized by the sale. Both the men who cut this timber have paid fines for their offense.

The price obtained by Marshal Bailey will not be known until after his arrival in Denver to-day. Several Denver lumber dealers sent representatives to bid on the lumber.—*Denver Republican, February 10*.

The officeseeker has discovered that there is an office at the city hall to be filled, or will be as soon as the ordinance creating a city forester has become a law, and the mayor's office is besieged with applications for the place. The appointment will be made by the board of public works, but any recommendations in this line offered by the mayor will be considered. Yesterday he stated that he would recommend no one for the place who was not thoroughly posted in regard to the planting and care of trees and who was not young and active enough to get around and do the work.—*Kansas City Journal*.

The Government officials are having

trouble with the owners of saw-mills in the hills, who have been cutting down timber on public land.

John Norris was arrested by Deputy Marshal Crocker, twelve miles north of Florissant, El Paso County, charged with cutting the prohibited timber. He was taken before James B. Severy, United States Commissioner, Colorado Springs, and gave \$500 bonds.—*Denver (Colo.) Republican, March 2.*

Forest Superintendent W. H. Buntain, successor of J. D. Benedict, is actively at work in his new position at

the Federal Building. He was assistant postmaster at Momence, Ill., where his father was postmaster; but his health was not good because of the confining work, and he came West.—*Santa Fe New Mexican.*

The *Leader* learns that Superintendent E. B. Hyde, of the forest reserve, on Friday seized a lot of logs near Twenty-five Mile creek, belonging to Jerry Dunlee, on the charge that they were illegally cut on the reserve.—*Chelan (Wash.) Leader.*

Forest Policy.

The National Wholesale Lumber Dealers' Association held its annual meeting at Boston, Mass., during the first week in March. The meeting was concluded by the usual banquet, and among the speakers on that occasion was the Hon. John M. Woods, of Boston, a member of the Massachusetts Forestry Association, who was introduced to speak concerning a lumberman's interest in forestry. Mr. Woods said, in part:

"Gentlemen, I want to say to you here that you think perhaps in some parts of the country the lumber business is old. I want to say to you here that you are meeting here to-night on the anniversary of the first exportation of lumber from the United States—200 years ago from this part of the country the first cargo was sent abroad.

"As the chairman has said, I have one or two specialties. I will touch on only one of them now. The first is on the lumber business—the forestry of the United States, and something about the legislation that has taken place in this country. As you know, the Pilgrims landed in 1620, and in 1631—eleven years afterward—the first law that was ever made in this country was passed in regard to it. It was enacted by the Pilgrim colony that there should be no fires set on the Lord's day and that any one that set any fire, if it did any damage,

should pay ten shillings or be publicly whipped. In 1639 it was further enacted that no man should set a fire on the Lord's day, the last day of the week, and if he did, and it did any damage, he should be required to pay a fine of forty shillings, and if it were done by a minor his parents or guardians should pay. In 1697 the first effort was made to find out the value of woods in North America. The English Government sent a commission here. The chairman was Mr. Bridges, who was a ship builder in the English dock yard at Portsmouth. He came here under a royal commission, and the commission read that he was to ascertain the conveniences of the woods of North America for furnishing woods for the royal navy. In 1699 the first cargo was shipped abroad. The largest part of this cargo was cut on the Piscataquis River, a little river that runs up from Portsmouth, N. H., about forty miles from here.

"There was no further legislation to amount to anything during the colonial period, and there never has been since to amount to anything. In 1743 Governor Wentworth, of the territory of New Hampshire, was appointed commissioner of all his majesty's woods in North America. You can have some idea, gentlemen, of the size of his commission. The king instructed the commissioners

to mark a large number of trees for use for the royal navy and this was done, but this commissioner, like the commissioners of later days, was human. He was denounced as a fraud and a villain and complaint was made to the royal governor of Massachusetts, who was governor of the territory of New Hampshire, and a petition was sent to the king for his removal, but they had 'pulls' in those days as they do in these days and he managed to hold his place for many years.

"We have seen the woodworking business from this country depart. Gentlemen around this board who are or have been in the business any length of time know that Boston forty years ago was the center—and the circumference, I might say—of the furniture business of this country. It has now gone where the raw material is. We have an incorporated society, and our idea is this: The first thing—and we believe it is the proper thing to do in the first place—is to educate public opinion to realize the necessity of the preservation of what we have. There is a bill before the legislature now which asks for an appropriation of \$4,000 to make a forest survey of the State. The forests in this State practically amount to nothing. There are a few box boards in this State and something of that kind, but we believe that the time has come to agitate this question and to ask the State—not only this State, but other States and the National Government—to reserve forests as national domains. There are a quarter of a million of acres in this State which are valueless for taxation and we purpose to ask the Government to reserve those. It has been demonstrated that it is possible to make this a paying investment for the State, so that this land which is practically valueless shall make some return. I will give you one illustration: In Plymouth County, less than forty miles from here, is a small tract of Pine land, and I will say to you for the benefit of those who are not aware of the fact that Cape Cod is a sandy district, and sandy land is adapted for the growing of Pine. There are two tracts of land down there

owned by different owners, and one of these was sown forty years ago with Pine seed, while the other was allowed to run wild. The result is that now the one tract is assessed for \$150 an acre and the other for \$2.50. That demonstrates that it is practicable to do something along these lines. It does not need any argument to show that we can do it. The chairman has referred to the fact that Memphis is the great market for hardwood to-day. Indianapolis was the great center not many years ago. I lived there from 1869 to 1873 and I have heard it said that it was impossible to exhaust the hardwood of Indiana, but you and I know that forty per cent of the hardwood to-day is brought in there. It behooves us to lock the door before the horse is stolen. We have public-spirited men in this State and they have taken hold of it. The idea is to enlighten the public and to influence the legislature to take hold of this matter.

"Another thing I might touch on is that our water supply depends on the forests. This Commonwealth has spent more than \$50,000,000, or will have spent, when the water-works system is completed, to maintain her water supply, when if our forests had been saved and cared for at least one-half of that sum would have been saved. In New York State through her Forest Commission they are saving the Adirondacks largely for this reason.

"It is a practical question, gentlemen, and I commend it to you for careful study and to take home with you. As the honorable president has said, it is a serious question where they are going to get the supply for the future from unless something is done along these lines."

Mr. Woods was followed by Hon. Robert C. Lippincott, of Philadelphia, who spoke of the growing interest in the question of forest conservation in his own State, briefly outlining the legislation that has been enacted and commending Dr. Rothrock for the faithful and efficient service which he has rendered as Commissioner of Forestry. Mr. Lippincott closed with the assertion that the

forestry question is one that should be seriously considered by lumbermen; that when as a class they did take the matter up it would be well taken care of.

In the March number of *The Irrigation Age* there appeared a paper on "The Irrigation Problems and Possibilities of Northern Wyoming," by Capt. H. M. Chittenden, Corps of Engineers, U. S. A. The purpose of Captain Chittenden in

in the Bighorn Mountains under the patronage, I believe, of the Burlington Railroad. It may have been the surpassing beauty and sublimity of the scenery around Cloud Peak Lake, which I had seen but a week before, that caused this much-advertised spot to appear altogether tame in comparison. More probably, however, it was the desolate appearance of the surrounding country, which is almost divested of the noble forests that once covered it. Here indeed is an impressive example of the ruin that has spread over many forest areas of the West. It alone is sufficient to convince any believer in the necessity of preserving our forests, that



LOGGING SCENE IN THE STATE OF WASHINGTON.

making a tour through Wyoming in the months of August and September, 1897, was to investigate the question of the construction of reservoirs in the arid regions through the agency of the General Government. As a close observer he does not fail to note the importance of forest preservation in the region included in his professional investigation. Of the effects of forest destruction he writes:

On our second day out from Sheridan we visited Dome Lake, a nascent summer resort

prompt and vigorous measures ought to be taken by the Government to save what remains and to restore what has been lost.

In this connection I may mention a matter which came to my attention about a week before. I made a short excursion from Buffalo, up the valley of Clear Creek to the old military reservation of Fort McKinney, where I had spent some time nine years before surveying its boundaries. I passed through the abandoned post, now the property of the State of Wyoming. The perfect state of preservation and the neat appearance of everything spoke highly for the care with which this piece of property is being preserved. But I imagine that the State is at a loss to know what to do

with it. It at once occurred that here was a central position from which to protect the forests of the entire Bighorn range. Let the post of Fort McKinney be reoccupied by United States troops, held there to do duty as foresters. If this is not considered a proper function for the regular troops, let a regiment be raised whose duty shall be confined to that of forest protection and let a portion of it garrison this post. There is no good reason that I can think of why the army should not afford the basis of an efficient police system for our national forests; there are many and excellent reasons why it should.

Captain Chittenden presents some very strong evidence in support of the assertion that the preservation of forest cover on mountain slopes is absolutely necessary in order that soil erosion may be reduced to the minimum—a fact that is almost always overlooked by those who oppose a conservative forest policy. In describing his journey through the mountains he says:

Teton Pass is incomparably the most difficult pass I have met with in the mountains. Its slopes are so steep that one would scarcely believe it possible for wagons to cross did he not see the evidence of their having done so. Unlike most passes, the two slopes of this one come together almost like the top of a roof, with no space on top; and it is but a mild exaggeration to say that a saddle horse on arriving at the top is laboriously digging its way up on one side with its hind feet and vigorously bracing with its fore feet to keep from sliding down on the other.

On the summit of this pass we were in dense clouds, from which the rain came down in perfect floods until we were drenched through and through. The road carried such torrents of water that it seemed unsafe to travel in, but the occasion afforded an excellent opportunity of seeing how forests protect mountain slopes from erosion by the elements. The heavy rain caused streams of water to pour down every gully or depression, but wherever this was in the forest areas the water came out clear, notwithstanding its heavy volume. Wherever we came upon open tracts destitute of vegetation the surface water was invariably laden with sediment.

A Reasonable Policy.

The following, in reference to forest reserves, has been furnished the *Journal-Miner* by a gentleman who has made a study of the proposition, and hence is conversant with the subject, and will be found of special interest at the present

time, inasmuch as it corrects some erroneously conceived opinions on the subject:

"There seems to be a general disposition upon the part of those interested in sheep grazing and other pursuits in the vicinity of forest reservations to confuse them with Indian and military reservations, upon which none are allowed to trespass, and which are set aside for specific uses of the Government.

"The forest reservations are of entirely different nature, and are set aside by the Government for what is considered the public good of the Territory. Scientific men, men of wide experience, who have been interested in this subject, have made thorough reports upon the arid condition of the Southwest and the necessity for the conservation of its meagre water supply. They came to their conclusion by years of careful observations, and in an unbiased manner, without interest, except the general welfare and prosperity of the country.

"Aside from this great question of water supply, there are other questions of equal importance to the people of Arizona, in whatever business they may be interested

"Remove the great pine forests, strip the territory of its magnificent belt of timber, and what have you left? A few rich men, who cut and sold the timber, upon one hand, and upon the other a vast territory denuded of its threefold value; the timber gone that should be used in the development of the Territory's great mineral wealth; the means for impounding water shipped to other States, and thousands of acres of worthless, barren, non-taxable, untillable land reverted to the Territory.

"Just where the reasoning man can find objection to the forest reservations, under the existing conditions, is difficult to say. The general rule governing forest reserves allows grazing privileges to all stock except sheep. In the San Francisco reservation even sheep are allowed to graze, and it is very probable that this ruling will be permitted so far as this reservation is concerned; the

reservation does not prevent the sale of timber to people of the Territory for all uses and purposes when there is need of same; it does not prevent bona fide entrymen from taking up land that is more valuable for agricultural purposes than for timber or mineral.

"A reservation does prevent fraudulent entries as homesteads on timber lands; it does prevent an indiscriminate slaughter of timber; it prevents the vast waste of timber by forest fires; it prevents a few people from deriving all the benefits from our forests to the detriment of the people in general.

"It is not the intention of the Interior Department or any of its representatives to put hardships upon the people of Arizona, but to preserve for her citizens those things which will, some time in the future, make her a proud sister among the sisterhood of States; it is their desire to people the Territory with men who come to make Arizona their home, and to protect them against those who come to glean, gather, and go."—*Arizona Journal-Miner*.

The following statement of the effect of forest removal on the water supply is extracted from Weekly Bulletin No. 28, Colorado Experiment Station. The bulletin was prepared by Prof. L. G. Carpenter and relates to the discharge of water by the Cache la Poudre River during the season of 1898:

"Since the early settlement the areas of forest have become much less from fires, denudation for mining, and railroad purposes. The amount used for domestic purposes is of small importance, except as careless and irresponsible cutting gives conditions favoring the spread of the devastating forest fires. From the standpoint of the water supply on which agriculture depends, the protection of the forests becomes of vital importance. The protecting influence of the forests on the snow cover is of the greatest importance. The letting in of the sun and wind melts and evaporates the snow without sensible formation of water, dries the springs and lessens the amount of

water available for use. It is safe to say that with the former forest cover, even with the small snowfall and little rainfall, the low stage of the river would not have fallen to thirty-four second-feet as it did this year, but would have been several times more, for the innumerable small springs would have continued their supply. If the forest cover continues to be removed, autumns of low water like the present will cease to be exceptional, but become the rule, the river will be lower than it has been this year, and may become as dry as some of the tributaries."

The Gila River Forest Reserve.

By proclamation of President McKinley, dated March 4, The Gila River Forest Reserve was formally segregated. It embraces a rough, mountainous region in the southwestern part of New Mexico, the Black Mesa Forest Reserve adjoining it on the west. It includes part of the Mogollon, Black, San Francisco and other ranges of mountains. The land is exceedingly rough, having no roads and but few trails through it. There are not many settlers within the bounds of the reserve. Those who are there are stockmen. They have a great many cattle, but not many sheep. Considerable areas of the forests within the reserve have been burned over. It is asserted that the Cliff Dwellers once inhabited the gorges and cañons within the bounds of the new reserve, and that remains of their dwellings are still in existence.

The Gila, San Francisco, Tulerosa, and Mimbres rivers and other streams have their sources in the mountains of this reservation. As several of these streams flow into Arizona, the people of that Territory have some interest in the preservation of the forests on their mountain water sheds. The rich alluvial valleys through which these streams run after emerging from the mountains, and the mild but arid climate, makes the conservation of water a matter of prime importance there.

The business men of this city have no

desire to see the sawmills shut down or the post and wood haulers deprived of their business through the establishment of a forest reserve, and would not advocate the establishment of such a reserve if they thought it would have that result. They, as well as the timbermen, are satisfied that the establishment of a forest reserve will not interfere in the least with these industries, and therefore they advocate it.—*Fort Collins (Colo.) Express.*

The Sheep Industry in Tulare County, California.

A writer in the *Pacific Rural Press* for March 4, 1899, states that in Tulare County, California, the value of taxable real estate and personal property is \$41,775,133; of sheep and lambs, \$299,712. The sheep owners therefore pay only about seven-tenths of 1 per cent of the county taxes. The writer of the article then says:

If it is true, as it appears upon the records, that this great sheep industry pays less than 1

per cent of our taxes; if it is true that our Government has placed it upon the protective tariff list; if it is true that our Government is to continue to furnish them pasturage free in future as it has in the past; if it is true that they are very largely responsible for the destruction of our forests, which means the destruction of our water supply; then I would suggest in all candor, and with due respect to the 99 per cent industry, that, as a financial proposition and as a proposition looking to the welfare of ourselves and our children, to the saving of our farms, our orchards, our vineyards, in short, all that we hold dear, that if we expect to continue to live here, we would better purchase this 1 per cent industry and ship it to another country, and thereby save our homes.

In a private letter, from which THE FORESTER is permitted to make an extract, President James Reid, of the Montana College of Agriculture, says:

I am glad that the President has seen fit to set apart the Gallatin Reserves, and sincerely hope that a much larger tract may be added, including all the headwaters of that river. There are many fertile valleys in the State of Montana and throughout the Rocky Mountain region, whose fertility can be made permanent only by making reserves at the headwaters of the streams that supply them.

Forest Management.

In a letter to the *Evanston Wyoming Press* Mr. W. F. Hill writes as follows of the wasteful way in which the timber is being stripped from the mountains in the vicinity of the town of Wells:

The Rock Springs Lumber Company now has a large force of men at work cutting timber on Townships 38 and 39 North, Ranges 109, 110 West, which land is not yet open to settlement. It is claimed that they have bought this land with soldier scrip, and it is claimed as agricultural land, and that removing the timber is necessary to put it in condition for settlement. Now every one in this country knows that such land is not, and never will be, of any account for agricultural purposes, the soil being shallow and situated on sidehills too steep to

admit of cultivation. The settlers of this section have asked repeatedly to have an investigation ordered from headquarters, but so far very little attention has been paid to our demands. However, there are too many people interested in the matter for it to be put aside for long. The amount of timber in this country is comparatively small and the future interests of a large and prosperous community demand that it be protected. This outfit pays no attention to either the rules of common sense or of the Interior Department in regard to the prevention of fires, and it is certain that if left alone they will cause great damage to what timber they do not cut, by fires which will unavoidably start among the refuse left by them. There is no law by which they can take this land without swearing that it is agricultural land and such a statement would be utterly false.

Forest Utilization.

Scarcity of Mine Timbers.

While the mining situation here continues to improve steadily, still there are many factors which are likely to retard operations for many weeks to come. There is no difficulty, particularly, in the actual mining of ore. If other conditions were favorable the tonnage of the camp would be up to the standard of 1,800 tons per day. But there are several almost insuperable difficulties in the way. In the first place, the roads are wretched. The ore teams have recently discarded their runners and are making the trips with wheels, but the snow is soft, and great ruts are cut down through the slush, into which the wagons sink up to the hubs. At one time yesterday afternoon at least a dozen teams were stuck on East Fifth Street, near Harrison Avenue, and it was all that four and six horses, aided by the picturesque vocabulary of the orehaulers, could do to raise the blockade. Even with a four-horse team it is necessary to move only about half a load. The chances are greatly in favor of the conditions getting rather worse than better, for

several weeks at least, unless another very cold snap should occur.

Then there is the timber famine. This is a cold, hard reality, as a visit to the

saw mills very clearly proves. This camp in ordinary times can consume about five carloads of logs per day, but in February only three cars reached the city, and there is but little improvement in the situation. Logs have risen in price at least $33\frac{1}{3}$ per cent and it will be a month before there is any improvement. Mr. Winten Morrell, of Guller & Co., saw mill men, explains that last year the loggers were getting very low prices for their logs, and as a result many of them were compelled to turn their attention to other channels of business. They couldn't make a living at the prices they were then receiving. During the winter the local lumber dealers advanced the price slightly, and there was a decided stimulus in the log market. But the blockade came, tying up



LOGGING ON THE COLUMBIA RIVER.

the sources of supply on the Blue River and the Frying Pan. Lately eight-inch logs have been bringing from 60 to 65 cents, while a year ago the same logs

brought 30 cents; seven-inch logs 30 to 35 cents, former price 20 cents; ten-inch logs 70 cents, former price 60 cents; twelve-inch logs 90 cents, formerly 65 cents. To these figures 15 cents is added by the saw mill men for framing, etc., this being their regular figure at all times. Of course the timber bill for the big mines, under these conditions, is increased from one-third to one-half, but probably the mine manager would not complain providing there were plenty of timbers. But even at these fancy prices only a stray carload now and then can be secured, and the shrewd logger naturally holds out for the highest prices. In fact the local saw mill men have had to bid very lively in order to secure what few timbers they have on hand, which accounts, partially, at least, for the high prices now prevailing.

The result of this timber famine is apparent. The big mines gobble up every stick of timber on the market. The small lessee is the one who particularly suffers. He is unable to prosecute his operations, particularly in catching up the iron stopes, and as a result a large amount of this work has had to be abandoned. In fact some of the lessees have found themselves in a rather serious predicament, and several of them have had to temporarily abandon work.—*Leadville (Colo.) Herald-Democrat.*

The frontispiece of THE FORESTER is a view of the entrance of a mine in the Cripple Creek (Colo.) district in its earlier stages of development, and illustrates some of the uses to which timber is put in the mining industry, while the hill in the background, once heavily timbered, shows that a mining community utilizes practically all of the timber at hand. The interior timbering of the mine is necessarily not shown, but in many formations it is most important and the quantity required for this purpose is large. On page 77 is presented a view of a forest in a reserve near one of the largest mining camps in the Northwest. It tells its own story—a story

that must appeal strongly to the mine owner. It is true that he may secure many good mine timbers from the charred trunks of the burned forest, but if he cares for the perpetuation of the great industry in which his interest lies he must feel a personal responsibility in hastening the adoption of a policy which will limit if not prevent the occurrence of forest fires in the mining regions.

The Diversion of Spruce.

Emphatically the pulp material is Spruce. No other wood, available in large quantities, has to so high a degree the requisites for this class of manufacture as has the leading element in the forests of New England. Its fiber is long and tenacious and the logs are both easily handled and worked; so that as the business of paper pulp manufacture develops greater and greater have been the inroads upon the Spruce supply for this purpose, and it is rapidly being diverted from its use as a lumber timber to the purposes of the pulp makers.

Ten years ago Spruce was the leading, or one of the leading, woods in use in New England and adjacent territory, and the condition of the Spruce market was of more interest to Eastern lumbermen than that of any other wood excepting White Pine, and perhaps exceeding that wood in its real significance. But Spruce lumber is rapidly becoming a thing of the past. Elsewhere in this issue of the *Lumberman* will be found a review of the changes which have taken place and are now in progress in the Spruce holdings and manufacture in New England. They come from the fact that, manufactured into paper, Spruce is many times more valuable than when made into lumber. The pulp business originated more than ten years ago, but even as recently as that the Spruce put into pulp consisted mainly of timber too small for profitable lumbering operations. The saw mills took the saw logs, and what was left on the lands, ranging perhaps from four to twelve inches in diameter, was taken to the pulp mills. But now

entire tracts are logged for pulp manufacture.

The article referred to has one forcible illustration of this change, in connection with the production of wood pulp on the Androscoggin River. In 1888 the consumption of Spruce timber on that stream in pulp manufacture was only 22,000,000 feet; in 1898 it was 195,000,000 feet. The same thing has been going on all over New England, though resisted in some sections, as on the Penobscot River. Spruce therefore is rapidly becoming a material not available for the lumber manufacturer, who is outbid for its possession by the pulp maker.

While New England is the home of the Spruce, the idea that it is confined to that section of the country is erroneous. There are large quantities of it in the Allegheny Mountains and no small amount in the upper peninsula of Michigan and in northern Wisconsin. There are a few million feet of Spruce lumber produced in Michigan, but the real use of the wood there as elsewhere is for pulp making. Two of the greatest centers of wood pulp manufacture in the country are now to be found in Wisconsin, the Spruce districts in that State being respectively on the Fox River, in the eastern part of the State, and on the Wisconsin River. The Spruce in that section ordinarily does not grow in solid bodies of any size, but is scattered in narrow belts through the other timber or is found mixed with other growths. But in the aggregate the output is considerable, and the traveler along the railroad lines which penetrate the upper peninsula sees at every station piles of pulp wood bolts brought in by the farmers and small jobbers, to be shipped to the pulp mills further south. Spruce has had its day as a lumber wood, but is even more valuable as standing timber available for the use of pulp making than it was when its only or chief use was the production of lumber.—*American Lumberman*.

Mine Props.

It is generally known that in all coal

mines the roof above the coal vein has to be propped up as the coal is dug out. This is done with wooden props made of round timber cut to proper lengths. In this country the coal mines are usually situated in wooded localities, and the cost of the mine props is a small matter; but in the United Kingdom and some States in Europe the trade in such timber is an important one. By the by, mine props in England are called "pit props" and "pit wood," and they come largely from the Scandinavian countries. While there is a limit to the amount of lumber timber in this country, the amount of small timber suitable for pit props may be truly said to be inexhaustible if used for no other purposes. We have had some inquiries as to the feasibility of shipping pit wood from the hardwood section of the Central South to British ports. The data as to prices, cost of freight, etc., available at present is not sufficient to permit any satisfactory answer; but it may be of interest to inquirers to know that English experts have some queer ideas as to the crushing strength of timber. The following extract is from *Timber* of March 4, 1899. We do not know just what is meant by "ordinary oak props":

"At a general meeting of the Federated Institution of Mining Engineers, held at Shelton, Stoke-upon-Trent, on the 22d ult., Prof. H. Louis read a paper, entitled 'Further Notes on Pit Props,' stating that of half a dozen ordinary oak props he had tested the best result was given by the straightest prop; yet this was only 1.11 tons per square inch, while the average of the six was only 0.92 ton per square inch. This figure compared very unfavorably with the result obtained from ordinary Baltic soft-wood props—viz, 1.571 tons—being only 60 per cent of that figure. The lowest figure obtained from soft wood—1.1 tons—was equal to the highest given by an oak prop. It was, therefore, impossible to doubt that the oak prop was far weaker than an ordinary Baltic prop."—*Southern Lumberman*.

Lumbering in the Northwest.

Graphic reproductions of forest scenes and lumbering operations are always interesting, even to the most casual observer. Especially is this true of the great forests of the Pacific Northwest, where the trees are of truly gigantic proportions, the growth upon the ground

a point in the southern part of the State of Washington. The latter represents a view of a waterway where the great logs are received to be floated to the sawmill. The two Oregon views show something of the methods by which great obstacles in the way of successful logging have been overcome by the ingenuity of re-



A TIMBER SLIDE IN OREGON.

very dense, and where lumbering methods are necessarily upon a scale commensurate with these conditions. In this issue THE FORESTER presents three lifelike illustrations of some of the methods in vogue in the lumber camps of that region. The above scene and one on page 87, are from Oregon, twenty miles below Portland, on the Columbia River, and another, on page 83, is from

sourceful lumbermen. Timber slides are constructed, upon which immense logs are quickly drawn up a steep hillside by means of steel wire cables, operated by machinery. Similar slides are used to conduct logs down hills or mountain sides to the mill, road or waterway. THE FORESTER will present other views of equal interest from time to time.

State Associations.

Southern California.

The meeting called by the Southern California Academy of Sciences was held yesterday forenoon in the assembly room of the Chamber of Commerce to organize a Forest and Water Society. There were about forty men present, representing several branches of the Fruit Growers' Exchange, and other organizations, as well as a number of persons engaged in water development and hydraulic engineering.

B. R. Baumgardt acted as temporary chairman, and Abbot Kinney was elected president and W. H. Knight secretary. The president read a paper on forestry, and a number of persons participated in a discussion of the work to be done.

It is the object of the society to promote the interests of forestry and irrigation by inducing the Federal Government to take greater interest in the subjects, though so far as could be ascertained, the society is not prepared to make any suggestions to the Government of specific irrigation development to be undertaken.

A committee of five, consisting of A. R. Sprague, T. P. Lukens, G. H. A. Goodwin, A. Campbell Johnston and B. R. Baumgardt, were appointed to draft resolutions and report a constitution and by-laws. They urged the Executive Committee to secure the membership in the society of all organizations and individuals interested in the work; endorsed the forest school conducted under the auspices of the University of Southern California; request the Secretary of the Interior to recognize forestry graduates on forestry patrol; and endorse the establishment of a botanical garden in one of the public parks of Los Angeles.

Vice presidents will be appointed for each county in Southern California. Three were named for the following counties: Los Angeles, W. G. Kerckhoff; Ventura, N. W. Blanchard, and San Bernardino, Col. Adolph Wood. The others will be appointed later.

Some idea of the scope of the work of

the society may be gathered from the committee work provided for in the Constitution. The Committee on Forestry shall devise plans for the conservation of our forests, and adjust conflicting interests; that on flood waters and reservoirs shall obtain data regarding suitable sites for storage reservoirs, and their cost of construction; that on the distribution of waters shall consider how the waters of this section can be best utilized for agricultural and industrial purposes; and that on legislation shall endeavor to secure such State or National legislation as may be approved by the association.

Much enthusiasm was manifest in the meeting. The president spoke of the annual destruction by fires that are denuding the mountains of their beautiful forests, which serve not only to increase precipitation, but act as natural storage reservoirs for holding the snows and rain-falls on the mountains. This work of conservation must be taken up at once, he declared, or the mountains will be bare in a few years, and we shall leave a heritage of shame to the next generation.

Olaf Ellison spoke of the work that had been accomplished in various parts of Europe, in France about the Bay of Biscay, in the Peninsula of Jutland, and in Sweden and Norway.

Capt. S. S. Mullins felt an eager, absorbing interest in this question. He had witnessed the vandal work of shepherds, who build four fires a day, one for each meal and one at night, if it is cool. They do not, like intelligent hunters, see that their fires are extinguished before leaving them, but leave that matter to chance and to the grossest neglect.

Col. Adolph Wood, of the Arrowhead Company, thought that shepherds should be forbidden to take their flocks into or over a Government reserve. He considered the subject one of vital, far-reaching interest.

A. W. Koebig, Dr. C. G. Baldwin, George H. Peck and others were among the speakers.—*Los Angeles Times*, Mar. 9.

Indiana.

The Indiana Forestry Association was formally organized at a meeting held in the rooms of the Commercial Club, at Indianapolis, on March 16.

The purpose of the new association is to awaken public interest in the care of forests and woodlands; to promote the afforestation of land which is at present unproductive and to encourage the planting of trees in public parks, private grounds and along streets and highways. A congratulatory letter was read from Dr. C. A. Schenck, of Biltmore, N. C. It is expected that the association will eventually have a membership of from 300 to 500. John P. Brown, of Connersville, was elected president; William H. Drapier, Amos W. Butler, John H. Holliday, Albert Lieber, of Indianapolis, and Alexander Johnson, of Fort Wayne, vice presidents; William Watson Woolen, secretary, and Lewis Hoover, treasurer; William Watson Woolen and John P. Brown and Alexander Johnson were chosen as a committee on forestry, while J. Clyde Power and John R. Pearson were named as a committee on parks.

The officers elected were constituted

an executive board, to have entire charge of the work of the association. It was agreed to hold monthly meetings on the second Saturday in each month. The annual meeting will be held on the Wednesday following the second Monday in January next.

The present membership comprises the following: John P. Brown, William Watson Woolen, James A. Mount, Dr. C. A. Schenck, Biltmore, N. C.; J. Clyde Power, John H. Holliday, Albert Lieber, Alexander Johnson, of Fort Wayne; A. W. Butler, William H. Drapier, Dr. J. W. Bates, Dr. G. V. Woolen, Prof. D. M. Geeting, Eugene J. Barney, of Dayton, O.; George H. Cooper, Montgomery Marsh, Prof. John S. Wright, James G. Kingsbury, Lewis Hoover and John R. Pearson.

The following honorary members were elected: J. Sterling Morton, of Nebraska; A. J. Brown, secretary of the Nebraska Forestry Association; Mr. Allen Chamberlain, secretary of the Massachusetts Forestry Association; Prof. Samuel Green, of the University of Minnesota; Prof. Ellen Hayes, of Wellesley College, and Prof. William Trelease, director of Shaw's Botanical Garden, St. Louis.

Recent Legislation.

Minnesota.

"An act to encourage the growing and preservation of forests, and to create forest boards and forest reserves" has passed the Minnesota House of Representatives and seems likely to pass the Senate also. This bill profits by previous forest law and contains most of the points which the history of the subject in this country has shown to be most important or most helpful. Some special points deserve mention here.

There is to be a State Forestry Board of nine members. The Chief Fire Warden and the Professor of Horticulture at the State University are to be ex-officio members; three other residents of the State are to be selected by the Board of

Regents of the University, each of them chosen for his knowledge of special conditions; and The Minnesota State Forestry Association, the Board of Managers of the Minnesota State Agricultural Society, the Minnesota Horticultural Society and the State Fish and Game Commission are each to appoint one of the remaining four. There will be a president, vice president and secretary, appointed by the Board, and an executive committee; the State treasurer is to be the treasurer of the Board. The Town Boards of Supervisors and the County Commissioners, respectively, are to be town and county forest boards, which are to have such authority only as is expressly conferred by legislature.

The forest preserves are to consist of tracts (1) set apart by the State for forestry purposes, (2) deeded, devised or granted to the State for these purposes by persons or granted by the United States Government, or (3) given or devised outright by persons.

The Board is empowered to accept certain classes of lands deeded by their owners, in which case the lands are to be permanently devoted to forestry purposes; to sell dead and down timber and mature timber; to deed tracts whenever the growth of towns, railroads or need of water-power may demand it; to cut and sell forests or trees or sell tracts with the right to cut and sell timber thereon; but the proceeds of such sales must be divided like the rest of the income from the forests. This income is to be divided, at least once in every five years, one-third going to reimburse the State for the expenses of forest management and for the non-payment of taxes on the tracts deeded, the State receiving one-half and the county and town each one-fourth of this third; two-thirds going to support the educational institutions or systems of the State.

As a source of revenue, or for their protection from the fire Board may lease (a) low meadow tracts and (b) other tracts for pasture, when this can be done without endangering the growth of trees.

If this bill passes, as it bids fair to do, the State of Minnesota will have joined the good movement for perpetual State ownership and protection of forest lands in which New York and Pennsylvania have already made such noteworthy progress.

Indiana Forest Tax Legislation.

The General Assembly of Indiana enacted a law during its late session which has for its object the encouragement of the preservation and proper management of timber lands in that State. It provides that upon any tract of land in the State of Indiana there may be selected by the owner, or owners, as a permanent forest reservation, a portion not

to exceed one-eighth of the total area of said tract, which shall be appraised for taxation at one dollar per acre. If the tract is original forest with not less than 170 trees on each acre its owner may avail himself of the benefits of this provision immediately by filing a description of the selected tract with the county auditor. If the land owner elects to plant a tract he must cultivate the same and have not less than 170 trees growing on it at the end of three years before he can have his reservation confirmed for the reduced assessment. In all cases dead trees must be replaced by new ones planted so that the minimum number on each acre shall not fall below 170; and it is further provided that no land owner who receives the benefits of this law shall permit cattle, horses, sheep, goats or hogs to pasture upon such reservation until the trees are four inches in diameter. Not more than one-fifth of the full number of trees on any such reservation shall be cut in any one year, except that dead trees may be removed and other trees planted in their places.

One section of the law enumerates the trees which shall be considered as forest trees within the meaning of its provisions. About twenty varieties of timber, including probably forty or more species of trees, are specified. It would not seem to include the Beech, Sycamore, Cottonwood, Black Cherry, Hackberry and Juniper, all of which are indigenous and each of some economic value, although the Kentucky Coffee, Osage Orange, Sassafras and Catalpa are given in the list that will be considered as forest trees within the meaning of the law.

It is made the duty of the county auditors to keep a record of all forest reservations. They are also to require owners or agents to subscribe under oath to the extent and description of the land reserved. It is made the duty of assessors to personally examine the various forest reservations when the real estate is appraised, and to note upon the return the conditions of the trees, in order that the intent of the law may be fully complied with.

A New National Park.

By an act of Congress approved March 2, 1899, a tract of land eighteen miles square, embracing in all 207,360 acres, and including Mount Rainier itself, was withdrawn from the Mount Rainier For-

est Reserve and dedicated to the purposes of a national park. It is to be known as the Mount Rainier National Park. The Mount Rainier Forest Reserve thus reduced contains 2,027,520 acres.

Educational.

The College of Forestry recently added to the curriculum of the University of Southern California, was formally opened in the college building at West Los Angeles yesterday morning. The exercises and lectures were held in the biological lecture room, and will continue to be given there for the present. After a few remarks by President George W. White the first lecture in the course was delivered by the Hon. Abbot Kinney. In an exhaustive discourse upon "The History of Forestry and Its Need in Southern California," Mr. Kinney set forth the original cause of a study of forestry in the dependence of primitive man upon the forest and its products for subsistence. The nations of Europe have made a science of forestry and it is conducted under governmental supervision.

To Southern California, with its treeless plains and scant rainfall, this subject is all-important, and this school will meet the want by turning out trained foresters, who will carry out this work under Government control. Their efforts will be directed to preserving and enlarging the present forest area on our watersheds.

At 1.20 p. m., Professor O. P. Phillips addressed the students upon "The Botany of Tree Growth." In brief he described the method of tree growth and

the absorption of moisture from the atmosphere by the leaves and the slow evaporation of the moisture from the soil through the trees.

Prof. Laird J. Stabler followed with a lecture on "Soil Physics." He described the meteorological instruments used in practical forestry and explained the effect of forests on the rainfall.—*Los Angeles Herald, March 4.*

Mr. Peter Barr, a prominent horticulturist and arborist, of London, Eng., who is visiting Ottawa at present, makes a suggestion that is well worth the attention of the Government. It is the establishment of a School of Forestry for instruction in the propagation and conserving of the forests. Much attention is being directed to this branch throughout the British Empire, especially in India, where it is a well-organized departmental work, the country being divided into districts under foresters and rangers. There is no School of Forestry in the British dominions in North America, and Mr. Barr thinks that the Imperial authorities would make a grant for the support of such an institution where thorough instruction could be imparted in the growth, care and preservation of timber, and that Ottawa is just the place for its location.—*Canada Lumberman.*

THE FORESTER.

PUBLISHER'S ANNOUNCEMENT.

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where all communications should be addressed.

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Make all checks, drafts, etc., payable to THE FORESTER.

New Members.

Since the last issue of THE FORESTER the following named persons have been elected to membership in the American Forestry Association:

Austin Corbin, 192 Broadway, New York, N. Y.

Sydney Arnold, Box 308, North Yakima, Wash.

Wm. J. Roberts, Pullman, Wash.

Joel Shoemaker, North Yakima, Wash.

Geo. H. Wallis, 333 Bay St., San Francisco, Cal.

Douglas T. Fowler, Berkeley, Cal.

Ezra F. Stephens, Crete, Neb.

Henry O'Sullivan, Indian Lorette, Prov. Quebec.

James Dun, Topeka, Kan.

Hon. Joseph M. Carey, Cheyenne, Wyo.

Hon. Henry C. Dillon, 321 Bullard Block, Los Angeles, Cal.

Arthur Gunn, Wenatchee, Wash.

Charles H. Baker, Seattle, Wash.

Peter Koch, Bozeman, Mont.

Henry E. Glazier, Stillwater, Okla.

W. N. Wilev, Holly, Colo.

Oscar R. Young, C. E. McCormick Building, Salt Lake City, Utah

Norval W. Wall, C. E., Colorado Springs, Colo.

F. A. Hutto, Stillwater, Okla.

Walstern R. Chester, 27 Doane St., Boston, Mass.

W. H. Howcott, 838 Common St., New Orleans, La.

E. L. Tebbets, Locke's Mills, Maine.

Fred Larkins, White Springs, Fla.

Geo. J. Krebs, Cairo, Ill.

Richard Thornton Fisher, 44 Brattle St., Cambridge, Mass.

G. Fred Schwarz, Department of Agriculture, Washington, D. C.

Nathan B. Prescott, 28 Boylston Terrace, Jamaica Plain, Mass.

C. H. Shinn, Berkeley, Cal.

Geo. S. Edwards, Commercial Bank, Santa

Barbara, Cal.

A. Edwards, Commercial Bank, Santa Barbara, Cal.

C. H. Frink, 725 State St., Santa Barbara, Cal.

E. P. Dunn, Arlington Hotel, Santa Barbara, Cal.

Clio L. Lloyd, *Morning Press*, Santa Barbara, Cal.

R. F. Winchester, M. D., Santa Barbara, Cal.

J. M. McNulty, M. D., Santa Barbara, Cal.

D. B. Harmony, " "

E. C. Tallant, " "

E. M. Pyle, " "

E. C. Roeder, " "

Jonn F. Diehl, " "

F. A. Canant, " "

T. R. Dawe, " "

Garrett S. Richards, " "

C. A. Storke, " "

Bennett Fithian, " "

A. W. Maulsly, " "

O. A. Stafford, Hope, Cal.

D. L. Wiggins, Ashland, Wis.

C. F. Latimer, Ashland, Wis.

Frederick Abbot, Milwaukee, Wis.

Mack Morris, Trenton, Tenn.

Life Member.

Mrs. Edward Whitney, Belmont, Mass.

TO THE EDITOR:

I note in your last issue the patriotic criticism which the reviewer of the Bulletin on "Measuring the Forest Crop" makes because the cubic foot measure has been employed, at the same time breaking a lance for the American lumber foot.

In this attempt the critic recommends and at the same time discredits the usual log rules, which, as is well known, are not really a measure but a complex agreement dependent in part on volume and on usage in conversion.

Will you please explain for the benefit of your readers how one can measure trees directly with the lumber foot, and how, for instance, a pulpman may know how much a given parcel of land or a lot of logs contains, if the report merely gives the amount of material according to the Doyle or Scribner rule.

Sincerely yours,

WM. B. HOWARD.

UTICA, N. Y., March 31, 1899.

In our criticism of Bulletin No. 20 of the Division of Forestry, "Measuring the Forest Crop," by A. K. Mlodziansky, in the March number of THE FORESTER, we did not state that directions for computing the contents of trees in cubic feet should have been entirely omitted, but

we criticised the lack of directions for measuring timber by American methods, namely, the board foot, standard, and cord. These measures will be used in this country for many years, both by lumbermen and foresters, and any treatise which subordinates them to a method used in some other country and almost never used in America is not complete and can have but little practical value.

The report of the Special Committee of the New York Legislature appointed to investigate as to what additional lands shall be acquired within the forest preserve in order to protect the watersheds and for the Agricultural Experiment Station has been printed under date of February 9. It is a document of sixteen pages, chiefly occupied with puffs of the regions visited by the Committee. Its

recommendations are supported by no arguments of consequence and apparently by little actual examination. The report as a whole is inconclusive and incomplete. It represents an exceedingly small return for the expenditure of the three thousand dollars appropriated for the Committee which made it.

The edition of THE FORESTER for November, 1898, having been exhausted, it has been found necessary to have a new one printed. Members of the Association and subscribers who may need copies of that issue (No. 11, Vol. IV,) to complete files for binding, will be supplied if they notify the publishers to that effect.

A limited number of complete copies of Vol. IV of THE FORESTER are offered for sale. Price \$1.00. Previous volumes are out of print.

Recent Publications.

The European and Japanese Chestnuts in the Eastern United States, Bulletin No. 42, Delaware Agricultural Experiment Station, by Prof. G. Harold Powell, treats of chestnut culture from a horticultural point of view. The history of the introduction of the cultivated varieties of the chestnut from France and Japan is briefly sketched and several pages are devoted to a discussion of the value of its fruit as food. Four pages are filled with the botanical consideration of the American, Asiatic and European types, their similarities and differences. Cultural suggestions include production of varieties from seedlings and hybrids; propagation, by budding and grafting; the treatment of the planted orchard and the grove of top-worked sprouts; subsequent care of trees; insect enemies and fungous diseases. The merits and advantages of the two introduced species are compared and the conclusion is drawn that the Japan Chestnut is the more desirable for the nut culturist, although the European species is accorded a higher value as a timber tree. A great development for this branch of horticulture in the Eastern States is predicted. A list of thirty-six desirable varieties, about equally divided between the two species, with brief descriptions of each, completes the pamphlet of thirty-five pages. It is well illustrated and well written, and serves excellently as an introduction to the subject under consideration.

Bulletin No. 40 of the Wyoming Experiment Station is entitled *The Trees of Wyoming and How to Know Them*. This bulletin of fifty pages was prepared by Prof. Aven Nelson, botanist of the Wyoming Station. It is a brief but comprehensive description of the native arborescent flora of Wyoming, and, with Prof. Buffum's bulletin on the shade and forest trees in artificial plantations, it makes a very complete exposition of the subject of trees and tree culture in that State. In consequence of the great altitude of the mountains of Wyoming and the arid conditions prevailing on the plains the forests are limited in area and it is but natural to presume the list of species included would not be large. Prof. Nelson has listed thirty-one species in this bulletin, although not all of these would be classed as timber trees. Of these eight are conifers, three Pines, two Spruces (*Picea*), the Douglas Spruce (*Pseudotsuga*), and two Junipers. The deciduous trees enumerated include five species of Poplar, two of Birch, one of Oak, three of Maple, and one of Ash and a number of species of lesser importance. The bulletin devotes some space to observations on the growing interest in trees and tree culture, forests and forestry and advocates an extension of the forest reservation system in Wyoming. It is well illustrated with half-tones and drawings of forest scenes, trees, twigs, foliage, flowers and fruits of the species described, and altogether it is a very interesting and instructive bulletin.

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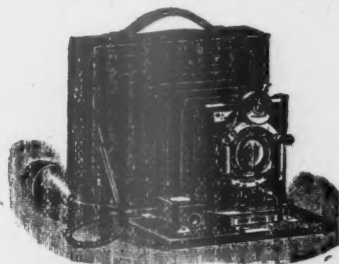
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The object of this Association is to promote :

1. A more rational and conservative treatment of the forest resources of this continent.
2. The advancement of educational, legislative and other measures tending to promote this object.
3. The diffusion of knowledge regarding the conservation, management and renewal of forests, the methods of reforestation of waste lands, the proper utilization of forest products, the planting of trees for ornament, and cognate subjects of arboriculture.

Owners of timber and woodlands are particularly invited to join the Association, as well as
are all persons who are in sympathy with the objects herein set forth.

